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Reader, School of Sports and Exercise Science
Loughborough University

Northwest Physical Activity and Health forum
November 22 2007

Outline of session
- Look at the evidence base and what we know
- A brief look at the early research
- Summarise/Examples of ‘correlates’ research
- Limitations and challenges of research
- A look at the future needs / directions
- Examples of interventions / projects

This is a relatively new area

Where is the evidence coming from……..

Summary of the developmental process of research into PA and the environment
- Formative research – qualitative / focus groups
  - Descriptive research – cross sectional/intercept
    (who uses, frequency, why, preferences)
  - Correlates research – associations
  - Observational / prospective / cohort studies
  - Intervention studies

Measurement Research Agenda
Of ‘use’ (observation / objective)
Of ‘the Environment’ (objective / subjective – drawn a lot from transportation)

Early findings…. Qualitative Studies
- Convenience
- Safety
- Aesthetics
Early findings:
- Access / opportunity important
- More active if higher density of user-pay facilities within 1-5 km of home
- No association with free facilities which included much more diverse group (parks, recreations, sports fields, schools/colleges/university)

Sallis et al. 1997

Children’s physical activity associated with ...
- Being outdoors
- Having more play spaces near home
- Spending more time in play spaces

Survey Results: Adults perceptions (Carnegie 2004)

Cross Sectional survey data: Western Australia (SEID1)

Types of facilities used
- River
- Beach
- Public open
- Streets
- Golf course
- Tennis courts
- Sport/recreation
- Gym
- Swimming pool

Do physical activity levels vary in different types of neighbourhoods?

Generated an interest for further studies...

Place matters
- Using existing data
- Collecting new data
  - Behavioural AND / OR Environmental
  - Environmental AND / OR Environmental
- Desk top data
  - Perceptions of the environment
  - Objective measures of the environment

Older Homes (dissagregated data) (Handy et al 2002)
Pre 1973 associated with > walking
>1 mile 20 times per month
A closer look at one example

Cross sectional 'correlates' study

Study on the Environmental and Individual Determinants of Physical Activity (SEID2)

T. Pikora, B. Giles-Corti, F. Bull, R. Donovan, K. Jamrozik, M. Kniuman and J. Clarkson

University of Western Australia

Project Example: SEID 2

- Example: Perth, Western Australia (pop 1.2 million)
- 408km² Study Area
- 1803 randomly-selected households surveyed on PA
- Stratified by SES
- Neighborhood = 400m buffer around residence

Pikora et al. Social Science and Medicine 2003

Theoretical Model: Delphi Technique

Created 4 Models: Walking/Cycling for Transport / Recreation


Published evidence base on physical activity and the environment

- Over 100+ primary papers..............
- Over 16 reviews..............
- At least 3 reviews of reviews............!

...............and counting

Pikora et al. MSSE 2006
What Independent Variables?

### Physical Activity

<table>
<thead>
<tr>
<th>Correlates Studies</th>
<th>Summary Findings: Young People</th>
<th>Physical Activity</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bull and Bauman, 2007</td>
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<td>Physical Activity</td>
<td>RESULTS</td>
</tr>
<tr>
<td>Environmental Variable</td>
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<td>Physical Activity</td>
<td>RESULTS</td>
</tr>
<tr>
<td>Re - Active</td>
<td>Re - Active</td>
<td>Physical Activity</td>
<td>RESULTS</td>
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<tr>
<td>Accessibility</td>
<td>Accessibility</td>
<td>Physical Activity</td>
<td>RESULTS</td>
</tr>
<tr>
<td>Take open routes</td>
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<td>Physical Activity</td>
<td>RESULTS</td>
</tr>
<tr>
<td>Distance (distance to destination)</td>
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<td>Physical Activity</td>
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<tr>
<td>Neighborhood</td>
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<td>Physical Activity</td>
<td>RESULTS</td>
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<tr>
<td>Neighborhood safety</td>
<td>Neighborhood safety</td>
<td>Physical Activity</td>
<td>RESULTS</td>
</tr>
<tr>
<td>Theories providing transport</td>
<td>Theories providing transport</td>
<td>Physical Activity</td>
<td>RESULTS</td>
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<tr>
<td>No association</td>
<td>No association</td>
<td>Physical Activity</td>
<td>RESULTS</td>
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<tr>
<td>Opportunity to exercise</td>
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<td>RESULTS</td>
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<td>No association</td>
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<td>RESULTS</td>
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<tr>
<td>Ease/convenience</td>
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<tr>
<td>Destinations</td>
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<td>Physical Activity</td>
<td>RESULTS</td>
</tr>
<tr>
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<tr>
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<td>Public Health Research Example: Parks</td>
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</table>

**Consistent findings:**

- Safety
- Ease / convenience
- Destinations
- Accessible
- Aesthetically pleasing
- Interesting

**“Walk Friendly Environments”**

**Links with transport research**

- (Modal shift / travel studies)
- More walking where there is . . .
  - Higher population density
  - Mixed use development
  - Public transport orientated design

**Public Health Research Example: Parks**

- "Increasing Walking: How Important Is Walking To, Access to, and Use of Public Open Space?"
Summing up the research to date

- Much of it is descriptive research
- Main focus has been on looking for associations – identifying what are the important factors in the environment
- Focus often at large scale and mostly urban (town planning)
- Less research on green space / parks / countryside
- Most of the available data from USA / Australia - applicability / generalisability to European contexts?
- There are some consistency in findings

Other observations of current literature (Strengths ? Limitations ?)

- Different population groups studied
- Different ‘environmental’ setting or contexts and different scale
- Different measures of environment and PA
- Different definitions of ‘neighbourhood’
- Lack of variability in environments
- Limited evidence on the social / cultural environment
- Where is the theory ……. ?
- What does it cost?

Example: Public Open Space Audit tool (POST)

Workplace Site Assessment

Future Research Directions

- Need for measures of outcomes
  - Physical activities - different domains, different contexts (in neighbourhood)
  - Environmental variables
- Cross sectional research in UK
- Experimental designs
  - Quasi, opportunistic, longitudinal,
- Economic analyses
Guidance?

In the USA....

Project RESIDE, Western Australia

C_BEH
Centre for the Built Environment and Health
School of Population Health, University of Western Australia

The Effectiveness of Urban Design and Land Use and Transport Policies and Practices to Increase Physical Activity: A Systematic Review

Gregory W. Heath, Rose C. Bresnahan, Judy Kruger, Rebecca Mills, Kenneth E. Powell, Leigh T. Turner, and the Task Force on Community Preventive Services

Heath et al., 2006

Guidance?

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Recommendations

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<th>Comment</th>
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<tr>
<td>Community-wide urban design and land use policies and practices</td>
<td>Strong Evidence Recommended</td>
<td>Strong evidence - Better performance Health behavioral differences rather than environmental change</td>
</tr>
<tr>
<td>Street-scale urban design and land use policies and practices</td>
<td>Evidence Contradict - Few studies</td>
<td>Few studies, limited evidence</td>
</tr>
<tr>
<td>Transportation and Travel policies and practices</td>
<td>Adequate evidence</td>
<td>Good evidence, multiple studies</td>
</tr>
</tbody>
</table>


Here in the England....
National Institute of Health and Clinical Excellence [NICE]
Commissioned Review 06/07

1. Transport (studies=26)
2. Urban design (studies=13)
3. Natural (studies=2)
4. Building (studies=10)
5. Policy (studies=3)

Thank you